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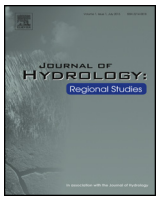

Peer Review Report

Peer review report 2 on Evaluation of sixteen reference evapotranspiration methods under sahelian conditions in the Senegal River Valley

Original Submission

Recommendation

Minor revision.

Comments to the author

Dear authors, first of all, I would like to thank you for every answer you provided and all the changes you made. Almost everything is clear now. However, some of my previous comments were remained unresponded. In addition, I highlighted my minor comments in the previous revision, but they were not applied (probably the authors did not see them). Below, I provide you with the new list of my comments and recommendations and the previous minor comments. I hope that my intervention will contribute to further improvement of your manuscript.

1) The objective of this study is the evaluation of 16 evapotranspiration equations with fewer climate variables inputs. However, some of the evaluated equations (e.g., Penman 1963, Valiantzas 2) are not simple and need climatic inputs same as the PMF-56 equation. If one has all climatic data available, then why should he/she use Valiantzas equation in any case? Why not use the PMF-56 method, which is recommended by ASCE as the sole international standard method, and can be used without any local calibration? I suggest the authors to keep simple equations in the paper and remove the other ones.
2) In the response of my previous comment, the authors mentioned that they used actual vapor pressure (ea) to estimate dew point temperature. Now, the question is that how did they estimate actual vapor pressure?! Again from dew point temperature!? I'm asking this question because dew point temperature was not collected from the stations (the lines 133–134).
3) The paper might be reviewed by a native English speaker. There are many English-related mistakes (mistakes in grammar/English usages). For example:

DOI of published article: http://dx.doi.org/10.1016/j.ejrh.2015.02.002

http://dx.doi.org/10.1016/j.ejrh.2015.03.011

Line 40: Change “should be estimates” to “should be estimated”.
Line 55: Change “promising equation” to “promising equations”.
Line 147: Change “equation” to “equations”.
Lines 288–289: Revise the sentence “The Schendel equation performed better at Fanaye where the mean RH was about 45% than at Ndiaye which was much more humid (RHmean = 70%).”
Lines 332: Change “underestimate” to “underestimated”; Change “white” to “while”.

Minor comments:

Line 45: The abbreviations should be defined at the first mention. For example, ETo in line 45, PM in line 45, PE in line 48, MR in line 51.
Line 75: Keep consistency in the text. “Penman Monteith” or “Penman Monteith”.
Line 99: Change “Tabari et al. (2010)” to “Tabari et al. (2011)”.
Line 103: Change “Tabari et al. (2010)” to “Tabari (2010)”.
Line 108: Correct “Sabziparva” as “Sabziparvar”.
Lines 120–122: Since the Hargreaves is not the only equation evaluated in this study, please replace this sentence with a general sentence or remove it.
Line 151: Cite the reference according to the guideline of the journal. [9]?!
Equations: Make required subscription for the notations in whole content (equations and text).
Line 160: The lambda letter was used for the latent heat of vaporation, but this parameter doesn’t exist in Eq. 1.
Equations: Berti et al. (2014), Trajkovic (2007) and Ravazzani et al. (2012) equations, which are the modified versions of the Hargreaves and Samani equation, should be presented in chronological order.
Equation 4: Maintain uniformity in the paper. Add asterisk for all equations or none of them. Besides, asterisk should be replaced with “x”, if you want to keep them.
Equation 8: “E” and “Ea” notations should be defined.
Equations 13: This equation is for relative humidity greater than or equal to 50%.
Equations: Different notations were used for mean temperature. T in Eq. 1, Ta in Eq. 10 and Tmean in the rest equations. Maintain uniformity.
Equations 20–23: The notations in these equations should be defined.
Line 220: Change “Fig. 1 and 2” to “Figs. 1 and 2”.
Line 239: Add year for the reference “Bouya-Ahmed”. In addition, this reference was not presented in the reference list.
Line 245: PMF56 or PMF-56? Keep consistency.
Line 257: Define “RMED” letters!
Line 259: Change “Sabziparvar et al. (2010)” to “Sabziparvar and Tabari (2010)”.
Line 269: There is a type in the sentence. Change “radiationto” to “radiation to”.
Line 276: Change “Tabari et al. (2010)” to “Tabari et al. (2011)”.
Line 301: ETo
Line 302: Change “(Tabari, 2011)” to “(Tabari et al., 2011)”.
Line 335: Change “valiantzas” to “Valiantzas”.
Line 351–352: Rephrase the sentence. It was duplicated from lines 315–317.
Line 512: Change the journal’s name from “I Irrig. . .” to “J Irrig. . .”.
Lines 528–529: The reference Tabari et al. (2010) is not cited in the text and it is not actually reverent to this study. It can be replaced with the following references:
Tabari, H., Hosseinzadeh Talaee, P. (2011) “Local calibration of the Hargreaves and Priestley-Taylor equations for estimating reference evapotranspiration in arid and cold climates of Iran based on the Penman-Monteith model”. Journal of Hydrologic Engineering ASCE, 16(10):837–845.
Tabari, H., Kisi, O., Ezani, A. Hosseinzadeh Talaee, P. (2012) “SVM, ANFIS, regression and climate based models for reference evapotranspiration modeling using limited climatic data in a semi-arid highland environment”. Journal of Hydrology, 444–445:78–89.
Figure 1a and Figure 2a: Correct the title of the y-axis. “Tremperature” => “Temperature”.

Figures 4 and 5:

- Correct the title of the y-axis: “Makkink-Haisen” and “Mankkink-Haisen” => “Makkink-Hansen”; “Allen-Makkiink” => “Allen-Makkink”.
- “KP” is abbreviation of “Penman”? K!!
- All of abbreviations should be defined in the captions.

All Figures: Maintain uniformity in the figures. “PM-ETo” or “PM ETo” or “P-M ETo”; Title of axes are in boldface or not.

Table 1:

- Change “oudin” to “Oudin”.
- Keep consistency! Penman 1948 vs. P1963. Use abbreviation for all of them or none of them.
- Add unit for RMSE and MAE.
- Change “Ranazzani” to “Ravazzani”.
- Change “Makkink-Hasen” to “Makkink-Hansen”.

**The editorial and English-related errors in the paper are not limited to the above-mentioned comment. Please check the paper carefully before submit the revised version.

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